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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BERNATZ, KEVIN M

ART UNIT PAPER NUMBER

1773

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,385

Applicant(s)

WU ET AL.

Examiner

Kevin M. Bernatz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/3/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Examiner's Comments

1. Regarding the limitation(s) in claim 5, the Examiner has given the term(s) the broadest reasonable interpretation(s) consistent with the written description in applicants' specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir. 1994). See MPEP 2111. Specifically, the Examiner notes that applicants' are basically claiming a magnitude of the SMNR (i.e. the SMNR of the claimed medium is greater than the magnitude of the SMNR of a comparable medium, but wherein the SiO₂ content is only "about 4%" – the process limitations are not germane to the determination of patentability of a product claim unless it can be proven that the process results in an unobvious difference to the claimed product).
2. The Examiner notes that claim 20 is an improper "means plus function" claim since it further limits the "means", which is not permissible for a claim to be treated as a proper "means plus function" claim. See MPEP 2181. For purposes of evaluating the prior art, the Examiner has interpreted claim 20 simply as written without any further requirement for defining the term "magnetic means".

Election/Restrictions

3. Applicant's election without traverse of Group I, claims 1 – 10 and 20 in the paper filed April 28, 2005 is acknowledged. Claims 11 – 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "improves" in claim 9 is a relative term which renders the claim indefinite. The term "improves" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, the Examiner notes that what one person may consider as "improves" may be viewed as detrimental to another and there is no concrete definition in the as-filed disclosure as what is encompassed by "improves" relative to each and every property which might be impacted by the segregation and decoupling of grains. As an example, should the SiO₂ result in higher (i.e. "improved") coercivity of the magnetic layer, but a competitor is

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utilizing a magnetic recording/reproducing apparatus with a magnetic head incapable of writing to the now higher coercivity, is such a "improvement" really an improvement?

For the purpose of evaluating the prior art, the Examiner has interpreted claim 9 as being met provided the SiO₂ in the magnetic layer performs the claimed functions of "segregation and decoupling of the grains".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 10 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Oikawa et al. (U.S. Patent App. No. 2002/0136929 A1) as evidenced by Yamamoto et al. (U.S. Patent No. 6,177,208 B1).

Regarding claims 1 and 20, Oikawa et al. disclose a magnetic recording medium comprising a substrate and a SiO₂-containing magnetic layer comprising grains (i.e. SiO₂-containing magnetic means), wherein the magnetic layer has SiO₂ between the grains (*Paragraphs 0004, 0005, 0048; 0074 and 0113*).

Regarding claims 2, 3 and 6, the Examiner notes that these limitation(s) are/(is a) process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is

not germane to the determination of patentability of the product unless an unobvious difference can be shown to result from the claimed process limitations. However, in the instant case, the Examiner notes that Oikawa et al. disclose forming the magnetic layers in a method meeting applicants' claimed process limitations (*Paragraphs 0074 and 0113*).

Regarding claims 4, 7 and 8, Oikawa et al. disclose magnetic layers meeting applicants' claimed composition limitations (*Paragraphs 0074 and 0113*).

Regarding claim 5, the Examiner notes that Oikawa et al. disclose magnetic recording media which are deemed to meet applicants' claimed relative SMNR requirements given that Yamamoto et al. disclose that as the SiO₂ content increases above 4%, the medium noise decreases (and hence, medium SMNR increases) (*Figure 6 and col. 8, lines 46 – 49: wherein the Examiner notes that 4 at% SiO₂ = a SiO₂/Co molar ratio of 0.07; 6 at% = 0.11 and 10 at% = 0.19*).

Regarding claim 9, Oikawa et al. disclose the SiO₂ segregating and decoupling the grains, and hence is deemed to meet the claimed limitations for the reasons recited in Paragraph 5, above (*Paragraphs 0004, 0005 and 0048*).

Regarding claim 10, Oikawa et al. disclose multiple magnetic layers meeting applicants' claimed structural limitations (*Paragraphs 0074 and 0113*).

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Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Several references disclose CoPt-SiO₂ granular magnetic layers which would be deemed to read on many of applicants' claims in a similar manner to Oikawa et al. above, wherein the CoPt-SiO₂ layers are deposited by a variety of methods with a variety of compositions: Moriwaki et al. (U.S. Patent App. No. 2003/0219630 A1), Nakamura et al. (U.S. Patent No. 2003/0157370 A1), and Kaitsu et al. (U.S. Patent No. 5,843,569).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
July 8, 2005


Kevin M. Bernatz, PhD
Primary Examiner